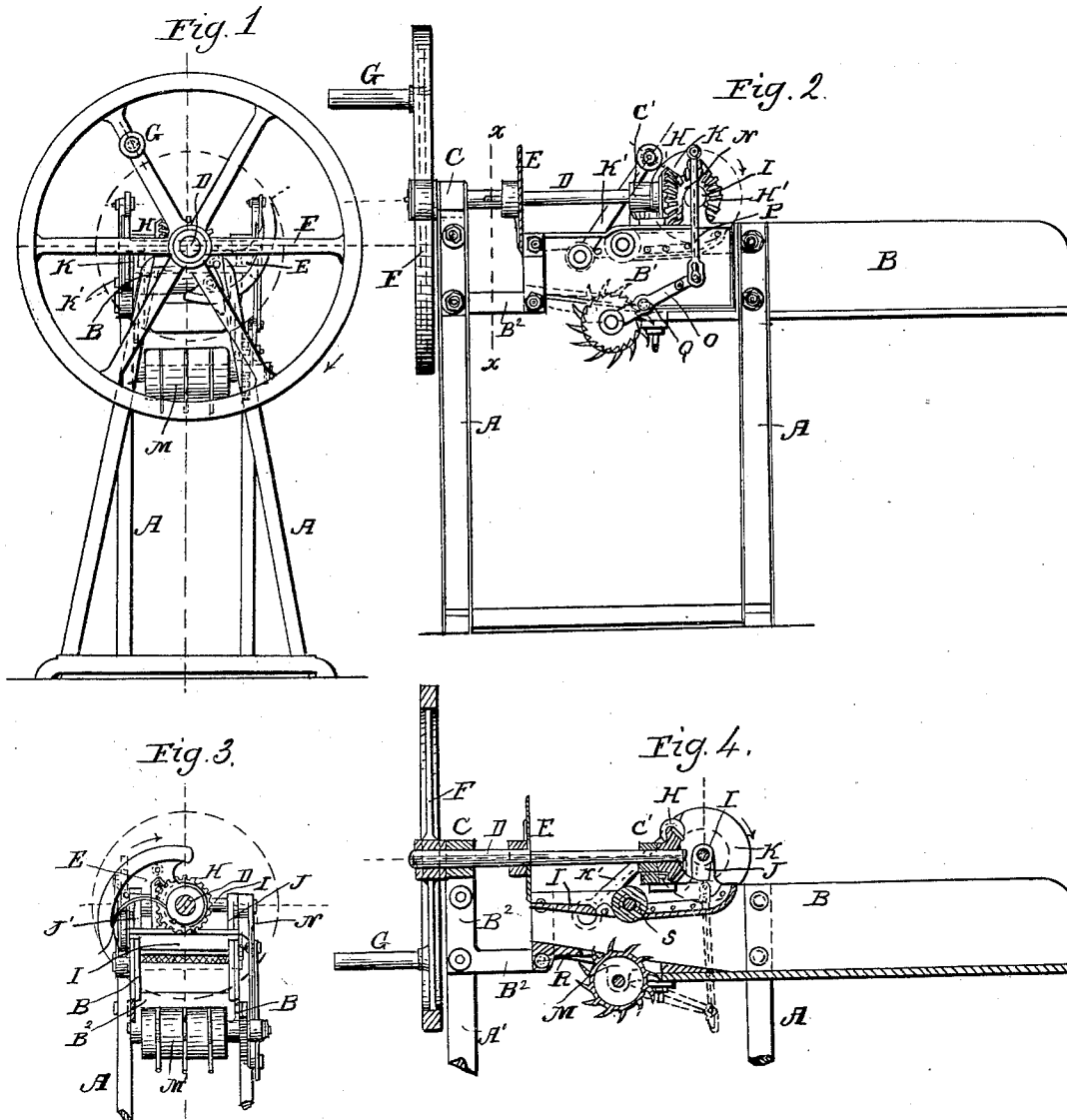


H. GOTTFRIED.

Straw Cutter.

No. 57,121.

Patented Aug. 14, 1866.



Witnesses:

Emil Schnack

A. Hornum

Inventor:

Heinrich Gottfried

UNITED STATES PATENT OFFICE.

HEINRICH GOTTFRIED, OF NEW YORK, N. Y.

IMPROVEMENT IN STRAW-CUTTERS.

Specification forming part of Letters Patent No. **57,121**, dated August 14, 1866.

To all whom it may concern:

Be it known that I, HEINRICH GOTTFRIED, of the city of New York, county and State of New York, have invented certain new and useful Improvements in Straw-Cutters, consisting in a circular knife placed eccentric on a shaft which is placed above the feeding-trough and central with the same, and in a mode of compressing and holding the straw or other material to be cut in the act of its being cut; and I do hereby declare that the following is a full and exact description of the same.

The accompanying drawings form a part of this specification.

Figure 1 represents a front view of my improved straw-cutter, showing the eccentric knife in the act of beginning to cut. Fig. 2 represents a side elevation. Fig. 3 is a section in the plane of line *xx*, the knife having completed its cutting motion. Fig. 4 is a vertical central section.

The object of my invention is, first, to produce a true cutting motion, which I would define as being composed of two motions, a drawing or sliding and a pressing motion; second, to hold and compress the material firmly while the knife passes through.

The nature of my invention consists, first, in the employment of a circular knife placed eccentric on a revolving shaft, which is placed central to the feeding-trough, either above or below; second, in the employment of a lever carrying on one side the compressing-plate, the other leg being acted upon by a cam, giving it the motion needed to make the compression-plate perform its duty.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same, its construction and operation.

A A' is the framing; B, the trough in which the straw, hay, or other material that is to be cut is placed. The part of the trough nearest to the knife at B' is of cast-iron, having provisions left for the bearings of several shafts. Two arms, B² B², protrude forward of B', and, rising vertically at right angles, are connected to the frame A'. They form at their junction the bearing C of the shaft D. Another bearing, C', is provided for the shaft above the cast-iron jaws B' B' of the trough. This shaft is placed central with the trough, but above the

same. It may also be placed below, if preferred, and carries the knife E. The knife E is a segment of a circle, or nearly so. It is placed eccentric with the center of shaft D. By its form it produces a true cutting motion. Its swinging around the center of shaft D produces a drawing motion, its eccentricity a pressing motion, which two combined are considered the perfect mode of producing the cutting motion needed. The chopping action of the straw-cutters in general is hereby entirely obviated and a perfect and steady cut produced.

On the shaft D, outside the bearing C, is provided a fly-wheel, F, which serves as crank, having fastened in one of the spokes the handle G, by which the revolving motion of the knife E is produced.

Outside of bearing C is fastened to the shaft D the bevel-gear H, acting on another of the same diameter, H', placed on the shaft I, which is at right angles to shaft D and runs in bearings J J', cast to the jaws of trough B' B'.

The shaft I carries on one end the cam K, which acts on lever K', to which latter is fastened the compressing-plate L. The lever and plate turn on their common center l, and are operated as clearly shown in Figs. 2 and 4 of the accompanying drawings. Fig. 2 represents the compressing-plate depressed, the knife beginning to cut. Fig. 4 represents the same elevated, the knife having cut and the material being moved forward by the action of the feed-roller M.

The feed-roller M is worked by a crank, N, on shaft I. The motion of the crank is communicated to the pawl-lever O by means of a connecting-rod, P. The pawl Q acts at the proper time on the ratchet-wheel R, fastened to the same shaft as the feed-roller M, and so the intermittent motion of the ratchet is transmitted to the feed-roller M. A roller, S, is placed a certain distance above the feed-roller M, which reduces the friction of the material on the under side of the upper plate of the trough, produced by the pressure of the feed-roller.

The fly-wheel F may be placed, if considered more convenient, on shaft I.

It will now be readily understood that when the fly-wheel F is turned the knife turns and, passing closely by the mouth-piece of the trough, will cut the material, by its peculiar

shape, steadily and properly, not producing any chopping or jerking motion; further, that by means of the bevel-gears H H' transmitting the motion of shaft D to shaft I and to the cam K, of the proper shape, the latter acting on the lever K' and at the same time on compressing-plate L, the latter will be acted upon at the proper time.

Having now fully described my invention, I claim and desire to secure by Letters Patent as follows:

1. The circular knife E, placed eccentric on

shaft D, the latter being central, or nearly so, with the feeding-trough B, substantially as and for the purpose herein set forth.

2. The compressing-plate L, or its equivalent, in combination with lever K' and cam K, shaft I, bevel-gears H' H, shaft D, and knife E, substantially as and for the purpose herein set forth.

HEINRICH GOTTFRIED.

Witnesses:

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